G.B. REED Shrimp Cruise 85-S-1. May 24 - June 7, 1985. West Coast of Vancouver Island and Queen Charlotte Sound

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G.B.REED SHRIMP CRUISE 85-S-1. MAY 24 - JUNE 7, 1985. WEST COAST OF VANCOUVER ISLAND AND QUEEN CHARLOTTE SOUND

by

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ABSTRACT

Boutillier, J. A. and W. R. Harling. 1985. G.B.REED Shrimp Cruise 85-S-1. May 24 - June 7, 1985. West coast of Vancouver Island and Queen Charlotte Sound. Can. Data Rep. Fish. Aquat. Sci. 563: 54 p.

This report summarizes information obtained during a shrimp survey off the west coast of Vancouver Island and in Queen Charlotte Sound. The survey, one of a continuing series conducted during the same time period over several years, collected information on biomass and distribution of pink shrimp (Pandalus jordani). Detailed catch records and resulting evaluations of biomass are presented. Environmental data was also collected and changes since the 1982-1985 El Nino on these grounds are discussed briefly.

RESUME

Boutillier, J. A. and W. R. Harling. 1985. G.B.REED Shrimp Cruise 85-S-1. May 24 - June 7, 1985. West coast of Vancouver Island and Queen Charlotte Sound. Can. Data Rep. Fish. Aquat. Sci. 563: 54 p.

Les auteurs résument les renseignements obtenus au cours d'un relevé des crevettes effectué au large de la côte ouest de l'île de Vancouver et dans le détroit de la Reine-Charlotte. Ce relevé, l'un d'une série de relevés effectués au cours d'une période de plusieurs années, a permis d'obtenir des données sur la biomasse et la répartition de la crevette rose (Pandalus jordani). Les auteurs présentent, de façon détaillée, les enregistrements des prises et les évaluations de la biomasse qui en ont été obtenues. Ils traitent aussi brièvement, à partir des données environnementales recueillies au cours du relevé, des modifications notées depuis le E Nino de 1982-1985.

INTRODUCTION

This document summarizes data collected off westcoast Vancouver Island (Fig. 1) and in Queen Charlotte Sound during a shrimp biomass trawl survey aboard the research vessel G.B.Reed during May-June, 1985. The primary objective of this survey was to obtain biomass estimates of the smooth pink shrimp (Pandalus jordani) on the Tofino and Nootka grounds (Fig. 2 and Fig. 3). Shrimp grounds in Queen Charlotte Sound (Fig. 4) were also surveyed during the final two days of the survey to determine if shrimp concentrations found by Butler (1974) were again present. In addition to the trawl survey, seawater temperature profiles were collected using expendable bathythermographs (XBT).

SURVEY METHODS AND FISHING GEAR

In all three fishing areas, the biomass trawl survey was conducted using a standard 18.6 m, high-rising, National Marine Fisheries Service shrimp sampling trawl (Boutillier et al. 1977).

Trawl locations for the biomass survey of Tofino and Nootka shrimp grounds were established using a systematic grid pattern based on Loran C blocks. Tows were made diagonally through adjacent 5990-X blocks along successive 5990-Y lines 20 microseconds apart. Trawl locations on the Queen Charlotte Sound grounds were based on a Loran C grid in which tows were made diagonally through 5990-X blocks 20 microseconds apart along successive 5900-Y lines 20 microseconds apart. Variations in the grid patterns occurred when exploring new areas, avoiding bad bottom, or being set off by strong tide and wind.

Tow duration was usually 30 minutes and distance covered, depending on tide and wind, ranged from 1.1 to 1.7 nautical miles (M) with an average distance of 1.4 M. Once the catch from each tow was dumped on deck, large fish were sorted by species, weighed and discarded. The remaining catch consisting of shrimp, small fish and invertebrate species was shovelled into tubs and weighed. One tub, arbitrarily judged to be representative, was then sorted by species and weighed. Percentage of shrimp by weight was calculated and total shrimp catch extrapolated. From the sorted tub, a one kilogram sample of shrimp was weighed and the number of shrimp per kilogram (no./kg) determined. These samples were then sorted by sex and measured (orbit of the eye to the mid-dorsal posterior margin of the carapace).

RESULTS

In total, 98 trawl tows were completed: 59 on Tofino ground, 22 on Nootka ground, 15 in Queen Charlotte Sound and 2 in Barkley Sound (Fig. 1). Temperature observations were made in conjunction with 27 of the trawl tows.

Detailed bridge logs, catch records, and temperature observations, by tow, are presented in Appendix table 1.

WESTCOAST VANCOUVER ISLAND

Total catch, by species, from the Tofino and Nootka grounds off west coast Vancouver Island is listed in Table 1.

Tofino Ground

The Tofino shrimp ground lies offshore from the west coast of Vancouver Island between 48°40' and 49°15' north latitude. In May, 1985, shrimp were concentrated in a 189 nautical square mile (M^2) area extending from Loran C Y-29130 to Y-29380 and between 50 and 80 fathoms (Fig. 2). Catch rates in this area of concentration ranged from a trace to 303 kilograms per 30-minute tow.

Total shrimp biomass for the area was estimated to be 1782 metric tonnes (MT); the greatest quantity observed since 1977 (Table 2). Number of shrimp per kilogram ranged from 148 to 402 with a weighted mean of 222.

Nootka Ground

Nootka ground lies offshore from the west coast of Vancouver Island between 49°15' and 49°35'. During the 1985 survey, shrimp concentrations were found in a 96 M^2 area extending from Loran C Y-29420 to Y-29540 and between 65 and 90 fathoms (Fig. 3). Catch rates ranged from 2 to 303 kg per 30-minute tow.

Total shrimp biomass for the ground was estimated at 566 MT, slightly less than the 1983 estimate and only about 25% of the 1977 estimate (Table 2). Within the area sampled, shrimp counts ranged from 216 to 540 per kilogram with a weighted mean of 293/kg.

QUEEN CHARLOTTE SOUND

Tows were confined to areas known to fishermen as the Northwest (~52°00'N.) and Northeast (~51°30'N.) corners of Goose Island Bank (Fig. 4). Shrimp were found in all tows made on these grounds with catch rates ranging from a trace (<1 kg) to 218 kg per 30-minute tow. Counts ranged from 234 to 360 shrimp per kilogram with a weighted mean of 266/kg and 262/kg for the N.W. and N.E. corners respectively.

Biomass estimates were not attempted for these grounds since time constraints precluded an extensive enough survey to delineate the total area of shrimp concentrations. A non-parametric Mann-Whitney U test was carried out to compare the 1985 catches (number of shrimp per 1M towed) with 1983 catches in the same area. Results indicated that there was no significant difference between the two catch rates. Mean catch rate in 1985 was less than 10% of the 1974 mean (12 kg/M vs 171 kg/M) encountered by Butler (1974) in the same general area of the N.E. corner and slightly less (58 kg/M vs 81 kg/M) on the N.W. corner.

Total catch for the survey in Queen Charlotte Sound is summarized in Table 3.

TEMPERATURE OBSERVATIONS

A total of 25 temperature observations were made: 18 on Tofino ground, 4 on Nootka ground, and 3 in Queen Charlotte Sound. Mean temperatures were compared with previous years observations at selected depth intervals (Table 4). On both Tofino and Nootka grounds, bottom temperatures in 1985 were substantially cooler (>1.0°C) than in 1983 for all depth intervals in which comparisons could be made indicating a return to those temperatures observed prior to the El Niño effect which began in 1982. Bottom temperatures in Queen Charlotte Sound, while numerically minimal, indicate a similar trend.

Temperatures at standard depth intervals for each observation are listed in Appendix table 2.

MISCELLANEOUS OBSERVATIONS

As time permitted, size composition data was collected on incidental species encountered in the catch. A summary of length/sex measurements is contained in Appendix table 3.

During the survey period, two trawl tows were made in Imperial Eagle Channel (Fig. 1) to examine *P. jordani* for incidence of parasites. This

information will be incorporated into a broader study conducted by Dr. A. Thompson in and offshore from Barkley Sound for the purpose of delineating stocks.

DISCUSSION

FISHERY IMPLICATIONS

If the shrimp remain spread out in relatively low densities, we would expect that only a very few small vessels with specialized markets will fish the Tofino or Nootka grounds (N.B. neither area has been fished commercially since 1981). If, however, the shrimp cluster into more contagious distributions, two things might happen:

1) shrimp will be harder to find with low effort and the vessels will stop fishing or,

2) they will find the concentrations, catch rates will be high, and there will be much speculation among the industry that vast quantities of shrimp are available.

The latter event may result in the industry gearing up beyond harvest potential of the fishery. Therefore, it is recommended that a precautionary quota (after Gulland, 1961, 1969) be set now to eliminate this possibility. Using Gullands' formula $1/2\ MB_0$, where M = instantaneous natural mortality and B_0 = virgin biomass, the recommended quota is 800 MT for Tofino Ground and 250 MT for Nootka Ground.

BIOLOGICAL CONCERNS

There are three aspects which will be investigated in future studies:

1) develop better estimates of year-class abundances from survey data;
2) attempt to gain a better understanding of recruitment mechanisms.
3) review management options and determine what, if any, are the biological implications of these options.

PERSONNEL

Date	Name	Agency
May 23-30	J. A. Boutillier	Pacific Biological Stn.
	Dr. D. Noakes	Pacific Biological Stn.
	Dr. A. B. Thompson	Dir. of Fish. Res. MAFF LOWESTOFT SUFFOLK, ENGLAND
May 23-June 7	W. R. Harling	Pacific Biological Stn.
	XUANHAI LI	ZHANJIANG FISH COLL. GUANGDONG P.R.C.
May 30- June 7	A. C. Phillips	Pacific Biological Stn.
	G. Brown	" " "

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Table 1. Total catch, by species, for the Westcoast Vancouver Island shrimp biomass survey, May 24 - June 4, 1985.

Species		Weight (kg)	% of catch
Pink shrimp	(Pandalus jordani)	3,511	30.5
Eulachon	(Thaleichthys pacificus)	2,046	17.8
Turbot	(Atheresthes stomias)	1,489	13.0
Dogfish	(Squalus acanthias)	693	6.0
Canary Rockfish	(Sebastes pinniger)	646	5.6
Hake	(Merluccius productus)	620	5.4
Lingcod	(Ophiodon elongatus)	536	4.7
Pacific dab	(Citharichthys spp.)	348	3.0
Rex sole	(Glyptocephalus zachirus)	242	2.1
Bocaccio	(S. paucispinis)	213	1.9
Flathead sole	(Hippoglossoides elassodon)	152	1.3
Slender sole	(Lyopsetta exilis)	148	1.3
Walleye pollock	(Theragra chalcogramma)	130	1.1
Blackmouth rockfish	(S. crameri)	117	1.0
Other	(species or groups which amount to less than 1% of the total catch--see footnotes to Appendix Table 1.)	605	5.3
Total weight		11,496	100.0

Table 2. Estimated biomass (MT) and distribution (M2) of smooth pink shrimp (P. jordani) off west coast Vancouver Island, 1977-1985.

Year	Tofino Ground		Nootka Ground	
	Biomass (MT)a	Area (M2)b	Biomass (MT)	Area (M2)
1985	1782	189	566	96
1983	30	1	604	87
1982	813	48	171	26
1981	1528	98	1449	59
1980	479	30	418	40
1979	1162	72	935	56
1978	1743	74	804	44
1977	4627	218	2359	96
1976	9716	210	3302	51
1975	7176	192	1651	48
1973	9716	162	1016	26

[a]MT=metric tonnes
[b]M2=nautical square miles

Table 3. Total catch, by species, for the shrimp survey in Queen Charlotte Sound, June 5 and 6, 1985.

Species	Weight (kg)	% of catch
Turbot (Atheresthes stomias)	682	26.5
Pacific ocean perch (Sebastes alutus)	667	25.9
Pink shrimp (Pandalus jordani)	516	20.1
Sponge	203	7.9
Dover sole (Microstomus pacificus)	172	6.7
Redbanded rockfish (S. babcocki)	94	3.7
Flathead sole (Hippoglossoides elassodon)	52	2.1
Spinycheek rockfish (Sebastolobus alascanus)	32	1.2
Other (species or groups which amount to less than 1 kg -- see footnotes to Appendix table 1)	156	5.9
Total	2573	100.0

Table 4. Mean bottom temperatures (°C) observed during G.B. REED shrimp surveys to west coast Vancouver Island and Queen Charlotte Sound, 1977-85. (Number of observations in parentheses.)

Depth (fm)	1985	1983	1982	1981	1980	1979	1978	1977
				Tofino Ground				
30- 49	7.4 (4)	-	8.3 (1)	8.1 (2)	-	-	-	-
50- 69	7.1 (9)	8.6 (6)	7.6 (11)	7.6 (12)	7.8 (13)	7.8 (8)	7.6 (12)	7.3 (9)
70- 89	6.6 (5)	8.1 (7)	7.4 (7)	7.1 (7)	7.4 (13)	7.4 (5)	6.8 (25)	6.9 (8)
90-109	-	7.9 (2)	6.8 (1)	6.5 (1)	-	-	6.9 (2)	-
				Nootka Ground				
50- 69	6.8 (3)	-	7.2 (4)	7.0 (2)	7.5 (4)	7.5 (2)	6.2 (1)	6.9 (1)
70- 89	6.6 (1)	7.9 (6)	6.6 (3)	6.7 (6)	7.2 (8)	7.4 (2)	6.7 (3)	6.4 (2)
90- 109	-	7.8 (1)	6.3 (1)	-	-	7.1 (1)	-	-
110-129	-	7.9 (2)	-	-	-	-	-	-
				Queen Charlotte Sound				
70- 89	-	-	6.7 (2)	6.9 (1)	-	6.6 (1)		
90-109	6.0 (1)	6.7 (1)	6.4 (3)	6.6 (2)	6.3 (2)	6.4 (3)		
110-129	5.9 (2)	6.7 (1)	6.4 (4)	6.2 (1)	6.1 (4)	6.3 (1)		

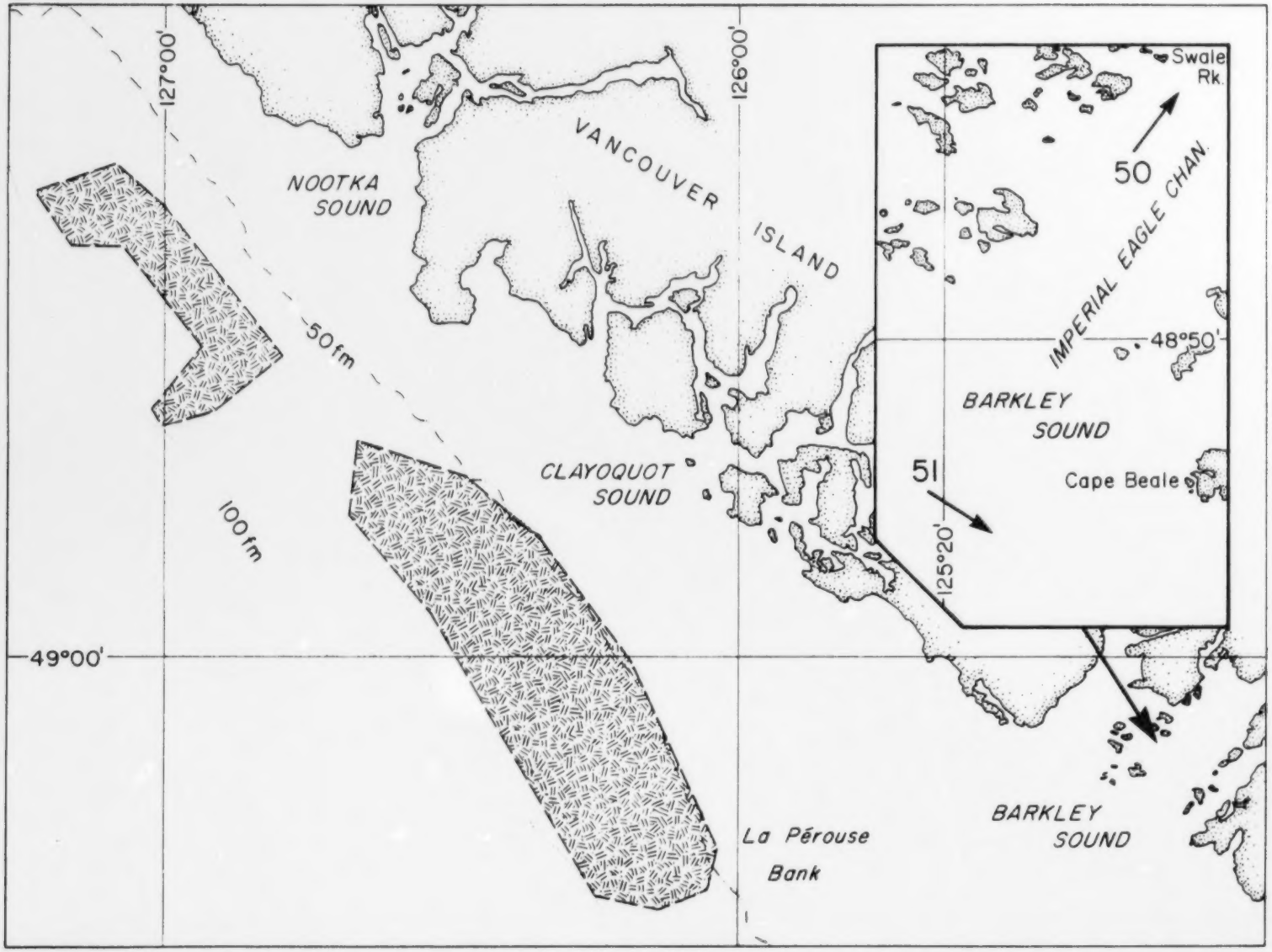

Fig. 1. Chart of lower west coast Vancouver Island showing general boundaries of Tofino (Clayoquot Sound) and Nootka grounds and location of tows conducted in Barkley Sound.

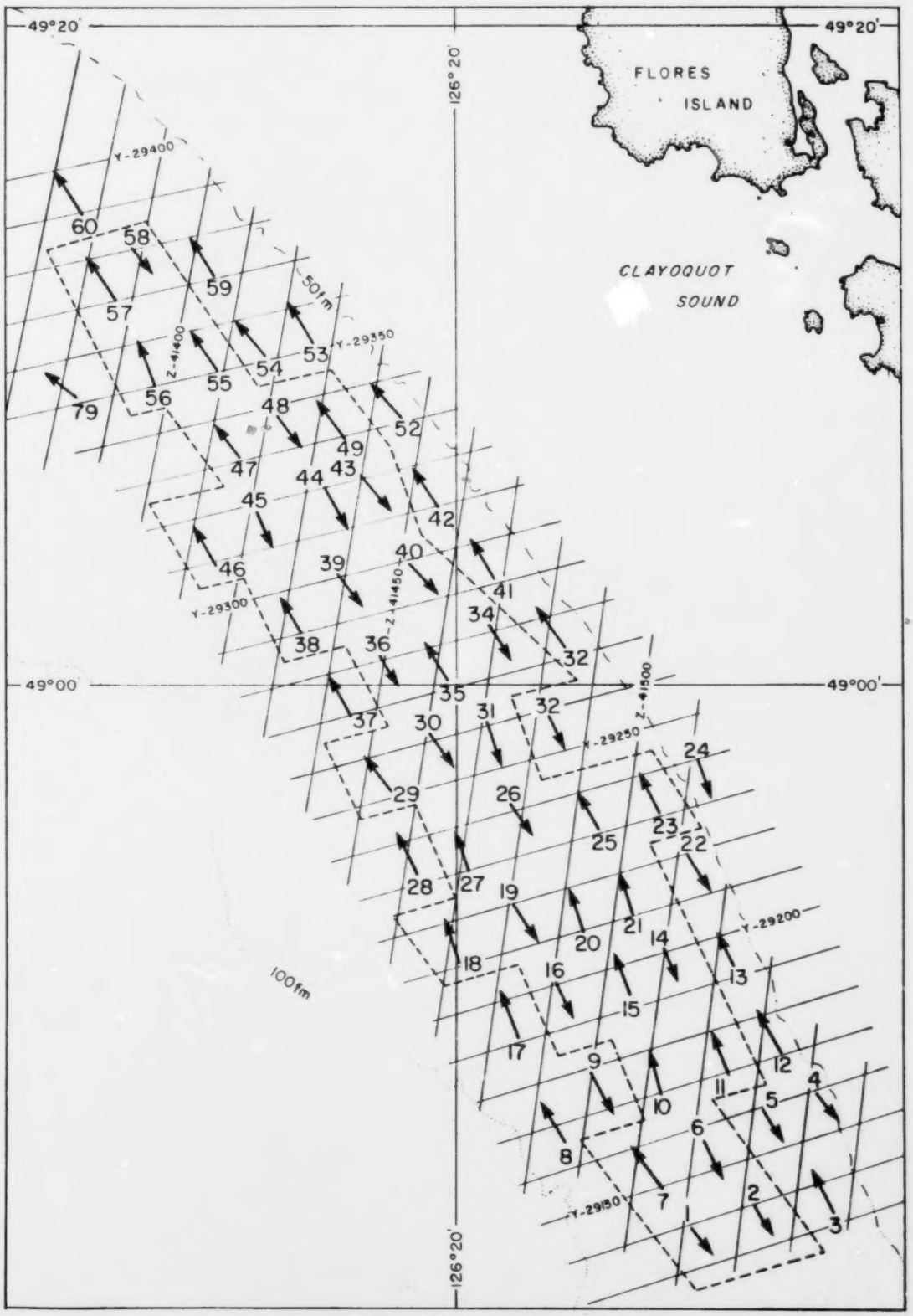

Fig. 2. Chart of Tofino Ground showing location of May 1985 tows and boundary of shrimp concentration (dashed line).

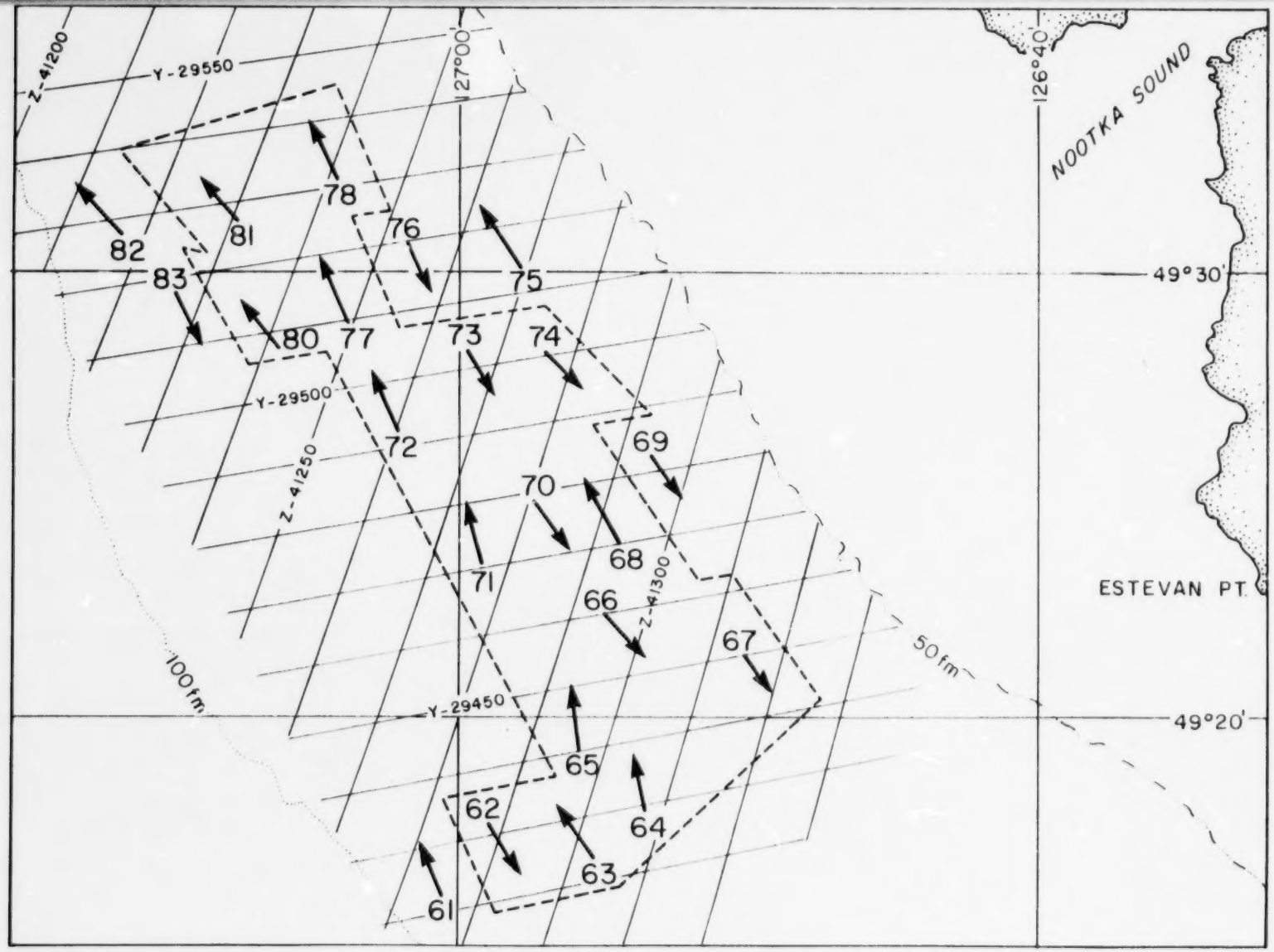

Fig. 3. Chart of Nootka Ground showing location of May 1985 tows and boundary of shrimp concentration (dashed line).

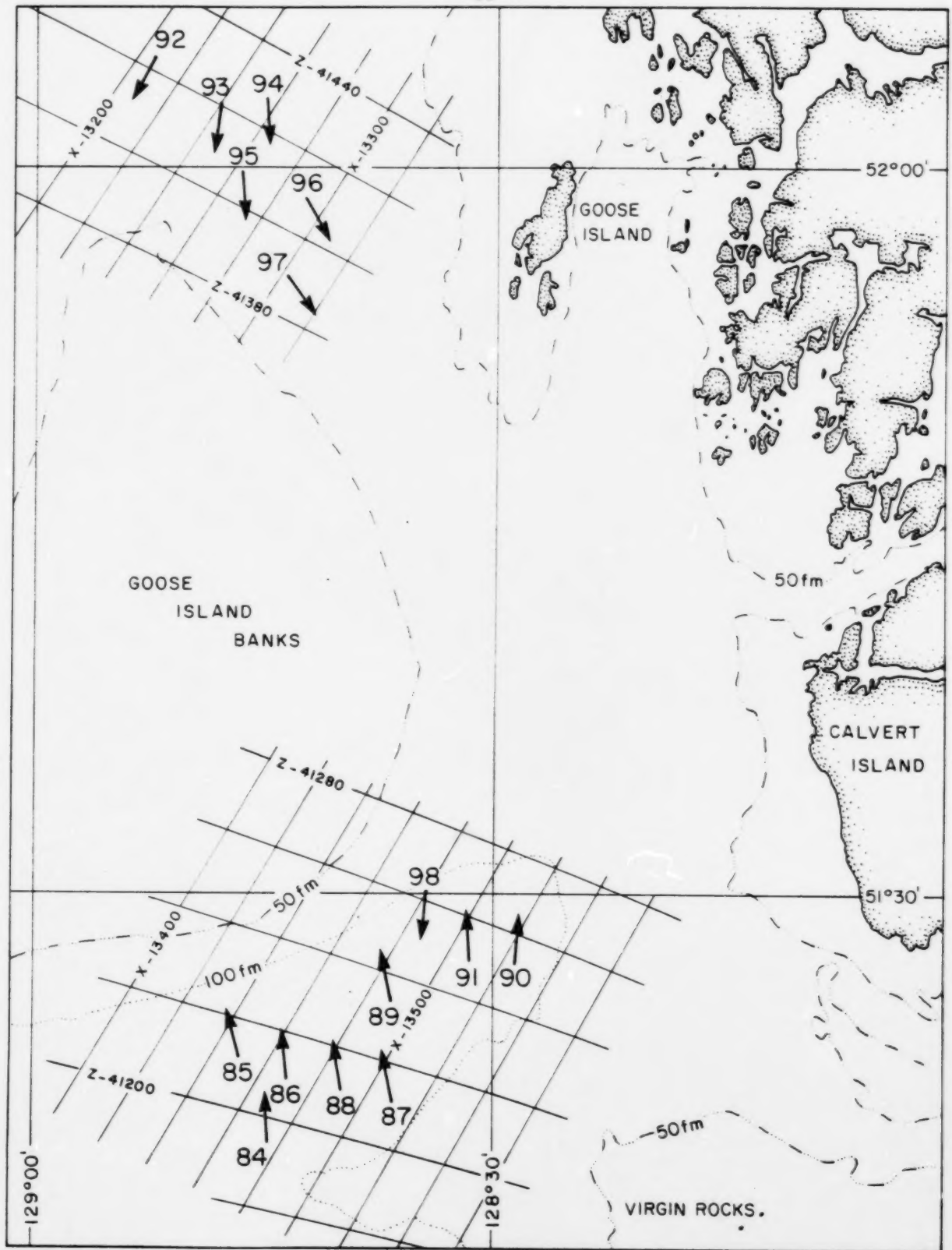

Fig. 4. Chart of Queen Charlotte Sound and showing location of June 1985 shrimp tows.

APPENDIX TABLE 1. Fishing log of G.B.REED shrimp biomass survey S-85-1, May 24-June 7, 1985. (see footnotes for explanation of terms).

HAUL NO.	1	2	3	4	5	6
DATE	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1218	1334	1445	1640	1756	718
DURATION(HR.MIN)	.30	.30	.31	.30	.30	.30
START N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	43.5	44.2	43.8	47.6	47.1	46.2
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	9.1	6.2	2.6	3.3	5.9	8.5
DIRECTION (DEG.TRUE)	155	153	337	141	150	149
FINISH N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	42.6	43.2	45.2	46.8	46.0	45.0
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	8.1	5.4	3.5	2.3	4.8	7.6
DISTANCE NAUT. MI.	1.2	1.1	1.5	1.1	1.3	1.3
DEPTH (FATHOMS)	74- 74	65- 65	57- 57	52- 50	60- 59	69- 68
SURFACE TEMP(DEG.C)	..	12.4	..	11.7	12.5	..
BOTTOM TEMP.(DEG.C)	..	7.3	..	7.2	7.6	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	36	19	74	73	40	167
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	1	2	3	4	5	6
DATE	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	36	19	74	73	40	167
SHRIMP						
PINK (JORDANI)	4	1	..	..	..	124
NUM/KG	330	402	..	..	..	254
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	T	..	..	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	T	T	T	T	5
FLATFISH						
DAB (PACIFIC)	..	..	55	54	12	..
DOVER SOLE	T	1	..	..	..	..
FLATHEAD SOLE	..	..	..	..	..	..
REX SOLE	2	3	..	T	T	2
TURBOT	7	1	..	..	2	8
OTHERS	T	T	6	T	3	2
ROCKFISH						
S. ALUTUS	..	..	..	..	..	T
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	T	..	..	..	..	T
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	T	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	23	..	..	..	6	18
HAKE	..	..	..	..	..	..
LINGCOD	..	..	10	8	3	6
OTHERS	T	13	T	T	14	T
SELACHI						
DOGFISH	..	..	3	2	..	1
OTHERS	T	T	..	9	..	1

APPENDIX TABLE 1 (continued)

HAUL NO.	7	8	9	10	11	12
DATE	MAY 25	MAY 25	MAY 25	MAY 25	MAY 25	MAY 25
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	828	941	1136	1247	1359	1624
DURATION(HR.MIN)	.30	.30	.30	.31	.31	.31
START N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	44.7	46.1	48.2	47.5	48.1	48.8
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	10.4	14.9	13.8	10.3	7.3	4.9
DIRECTION (DEG.TRUE)	328	330	152	342	337	331
FINISH N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	46.0	47.3	46.9	48.8	49.4	50.1
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	11.9	16.1	12.7	10.9	8.1	6.0
DISTANCE NAUT. MI.	1.7	1.5	1.4	1.4	1.4	1.5
DEPTH (FATHOMS)	78- 81	89- 90	81- 82	73- 72	61- 62	53- 54
SURFACE TEMP(DEG.C)	..	..	..	..	..	..
BOTTOM TEMP.(DEG.C)	..	..	..	..	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	43	343	167	201	327	40
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	7	8	9	10	11	12
DATE	MAY 25	MAY 25	MAY 25	MAY 25	MAY 25	MAY 25
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	43	343	167	201	327	40
SHRIMP						
PINK (JORDANI)	2	..	..	169	276	..
NUM/KG	241	..	..	190	230	..
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	T	..	..	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	1	T	T	..	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	30
DOVER SOLE	..	22	12	..	..	..
FLATHEAD SOLE	2	T	1	..	..	..
REX SOLE	T	10	10	..	2	1
TURBOT	24	217	120	12	8	..
OTHERS	..	2	5	..	5	5
ROCKFISH						
S. ALUTUS	T	3	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	T	48	11	T	..	..
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	15	T	..	12	..	..
HAKE	..	..	..	..	1	..
LINGCOD	..	19	6	6	11	4
OTHERS	T	4	..	..	24	T
SELACHI						
DOGFISH	..	..	2	..	..	..
OTHERS	T	17	..	2	..	..

APPENDIX TABLE 1 (continued)

HAUL NO.	13	14	15	16	17	18
DATE	MAY 25	MAY 26	MAY 26	MAY 26	MAY 26	MAY 26
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1731	725	840	956	1131	1229
DURATION(HR.MIN)	.30	.30	.30	.30	.30	.39
START N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	51.4	52.0	50.4	50.9	49.2	51.5
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	7.1	10.3	11.9	15.4	17.0	19.8
DIRECTION (DEG.TRUE)	337	149	338	153	336	341
FINISH N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	52.5	50.9	51.7	49.8	50.7	52.8
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	7.8	9.3	12.7	14.5	18.0	20.5
DISTANCE NAUT. MI.	1.2	1.1	1.5	1.3	1.6	1.5
DEPTH (FATHOMS)	54- 54	62- 62	70- 69	79- 80	86- 86	89- 86
SURFACE TEMP(DEG.C)	..	11.9	..	..	11.7	..
BOTTOM TEMP.(DEG.C)	..	7.8	..	..	6.3	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	66	246	261	162	145	152
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	13	14	15	16	17	18
DATE	MAY 25	MAY 26	MAY 26	MAY 26	MAY 26	MAY 26
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	66	246	261	162	145	152
SHRIMP						
PINK (JORDANI)	..	160	139	20	T	7
NUM/KG	..	262	175	296	..	244
PRAWN	..	..	..	..	T	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	T
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	7	5	..	1	T	1
FLATFISH						
DAB (PACIFIC)	44	..	..	..	..	..
DOVER SOLE	1	..	..	5	14	25
FLATHEAD SOLE	..	T	T	2	..	3
REX SOLE	1	15	T	2	3	1
TURBOT	..	1	7	73	98	78
OTHERS	7	7	..	1	6	2
ROCKFISH						
S. ALUTUS	..	..	..	3	8	..
S. BABCOCKI	..	..	..	7	3	..
S. CRAMERI	..	..	1	17	7	4
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	..	..	T	T	..
OTHER ROUNDFISH						
EULACHON	..	40	112	20	T	25
HAKE	..	..	..	..	..	..
LINGCOD	4	9	..	8	6	5
OTHERS	T	8	T	T	..	T
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	2	1	2	3	..	1

APPENDIX TABLE 1 (continued)

HAUL NO.	19	20	21	22	23	24
DATE	MAY 26	MAY 26	MAY 26	MAY 26	MAY 27	MAY 27
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1349	1453	1630	1739	720	831
DURATION(HR.MIN)	.30	.29	.30	.30	.30	.30
START N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	53.3	52.4	53.0	54.8	56.1	57.7
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	17.4	14.1	11.8	9.2	10.6	8.8
DIRECTION (DEG.TRUE)	149	342	341	150	335	150
FINISH N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	52.2	53.7	54.2	53.7	57.3	56.5
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	16.2	14.7	12.4	8.1	11.5	8.1
DISTANCE NAUT. MI.	1.4	1.4	1.4	1.4	1.3	1.3
DEPTH (FATHOMS)	77- 76	71- 70	65- 64	54- 53	57- 57	46- 47
SURFACE TEMP(DEG.C)	..	..	..	11.5	..	..
BOTTOM TEMP.(DEG.C)	..	..	..	7.5	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	90	229	315	46	469	88
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	19	20	21	22	23	24
DATE	MAY 26	MAY 26	MAY 26	MAY 26	MAY 27	MAY 27
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	90	229	315	46	469	88
SHRIMP						
PINK (JORDANI)	17	133	214	T	303	..
NUM/KG	196	170	218	..	267	..
PRAWN	..	T	T	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	T	..	T	..	T	T
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	T	T	..	T	2
FLATFISH						
DAB (PACIFIC)	..	..	..	30	T	50
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	T	..	3	..	T	..
REX SOLE	T	T	10	1	6	1
TURBOT	17	13	39	..	..	..
OTHERS	1	T	7	4	8	3
ROCKFISH						
S. ALUTUS	..	T	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	T	5	T	..	..	..
S. PAUCISPINIS	9	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	T	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	42	64	30	T	..	..
HAKE	..	..	..	..	..	..
LINGCOD	..	10	6	9	150	32
OTHERS	..	..	6	2	2	T
SELACHI						
DOGFISH	4	..	..	..	..	..
OTHERS	T	4	..	..	..	..

APPENDIX TABLE 1 (continued)

HAUL NO.	25	26	27	28	29	30
DATE	MAY 27	MAY 27	MAY 27	MAY 27	MAY 27	MAY 27
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	942	1119	1223	1329	1430	1611
DURATION(HR.MIN)	.30	.30	.31	.29	.30	.30
START N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	55.5	56.3	54.3	54.2	56.7	58.5
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	13.4	17.5	19.4	21.7	22.9	21.2
DIRECTION (DEG.TRUE)	333	142	342	332	321	149
FINISH N. LAT. (DEG)	48	48	48	48	48	48
(MIN)	56.7	55.3	55.6	55.5	57.8	57.4
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	14.3	16.4	20.0	22.7	24.2	20.1
DISTANCE NAUT. MI.	1.4	1.3	1.4	1.5	1.4	1.4
DEPTH (FATHOMS)	64- 64	71- 70	79- 78	84- 83	82- 83	77- 76
SURFACE TEMP(DEG.C)	..	12.0	..	12.2	..	..
BOTTOM TEMP.(DEG.C)	..	6.7	..	6.6	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	158	222	105	80	77	88
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	25	26	27	28	29	30
DATE	MAY 27	MAY 27	MAY 27	MAY 27	MAY 27	MAY 27
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	158	222	105	80	77	88
SHRIMP						
PINK (JORDANI)	81	131	20	T	7	17
NUM/KG	187	148	224	..	328	186
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	T	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	1	T	T	T	T	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	6	1	1	1	..	T
REX SOLE	4	2	1	T	..	T
TURBOT	8	8	26	53	31	9
OTHERS	2	2	1	1	1	T
ROCKFISH						
S. ALUTUS	..	T	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	..	2	4	T	2	2
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	34	75	52	24	36	60
HAKE	..	..	..	..	..	..
LINGCOD	22	..	..	..	..	..
OTHERS	..	..	T	..	..	..
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	..	1	..	1	..	..

APPENDIX TABLE 1 (continued)

HAUL NO.	31	32	33	34	35	36
DATE	MAY 27	MAY 28	MAY 28	MAY 28	MAY 28	MAY 28
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1714	714	821	925	1112	1220
DURATION(HR.MIN)	.30	.30	.30	.30	.29	.30
START N. LAT. (DEG)	48	48	49	49	49	49
(MIN)	57.5	59.1	1.0	1.8	0.1	0.8
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	17.8	15.7	15.0	18.6	20.4	23.5
DIRECTION (DEG.TRUE)	337	153	326	143	333	152
FINISH N. LAT. (DEG)	48	48	49	49	49	48
(MIN)	58.9	58.0	2.3	0.7	1.2	59.8
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	18.6	14.9	16.3	17.4	21.3	22.6
DISTANCE NAUT. MI.	1.4	1.3	1.6	1.4	1.3	1.2
DEPTH (FATHOMS)	70- 70	64- 64	56- 55	63- 63	71- 71	76- 77
SURFACE TEMP(DEG.C)	..	..	12.2	..	..	12.4
BOTTOM TEMP.(DEG.C)	..	..	7.2	..	..	6.6
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	107	169	26	159	151	123
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	31	32	33	34	35	36
DATE	MAY 27	MAY 28	MAY 28	MAY 28	MAY 28	MAY 28
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	107	169	26	159	151	123
SHRIMP						
PINK (JORDANI)	46	..	..	5	57	26
NUM/KG	161	..	..	279	172	192
PRAWN	T	..	..	..	T	T
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	T	T	T
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	T	T	T	T	..
FLATFISH						
DAB (PACIFIC)	..	..	1	..	..	..
DOVER SOLE	..	..	..	T	..	..
FLATHEAD SOLE	..	61	T	7	T	..
REX SOLE	T	4	T	4	T	1
TURBOT	5	18	..	21	11	14
OTHERS	T	15	3	3	2	1
ROCKFISH						
S. ALUTUS	..	..	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	2	1	T	T	1	2
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	54	50	..	114	80	79
HAKE	..	..	T	T	..	..
LINGCOD	..	11	10	..	..	..
OTHERS	..	..	10	T	..	..
SELACHI						
DOGFISH	..	7	2	2	..	..
OTHERS	T	2	..	3	..	T

APPENDIX TABLE 1 (continued)

HAUL NO.	37	38	39	40	41	42
DATE	MAY 28	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1320	1423	1612	1721	712	813
DURATION(HR.MIN)	.30	.30	.30	.30	.30	.20
START N. LAT. (DEG)	48	49	49	49	49	49
(MIN)	59.0	1.5	3.3	3.7	3.2	5.4
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	24.9	27.0	25.4	22.1	18.2	20.8
DIRECTION (DEG.TRUE)	332	326	144	140	330	327
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	0.2	2.6	2.3	2.7	4.4	6.6
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	25.9	28.1	24.3	20.8	19.3	22.0
DISTANCE NAUT. MI.	1.5	1.4	1.3	1.4	1.4	1.4
DEPTH (FATHOMS)	82- 81	80- 78	73- 74	68- 67	58- 57	57- 56
SURFACE TEMP(DEG.C)	..	..	..	12.4	..	..
BOTTOM TEMP.(DEG.C)	..	..	..	6.8	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	44	42	149	201	44	150
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	37	38	39	40	41	42
DATE	MAY 28	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	44	42	149	201	44	150
SHRIMP						
PINK (JORDANI)	T	2	94	114	..	..
NUM/KG	..	346	207	232	..	..
PRAWN	T	T	T	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	T	..	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	2	3	T	..	..	..
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	8
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	..	..	..	2	1	..
REX SOLE	T	..	..	2	5	T
TURBOT	26	24	9	6	1	4
OTHERS	3	5	..	2	5	8
ROCKFISH						
S. ALUTUS	..	..	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	1	T	2	..	1	..
S. PAUCISPINIS	..	..	..	..	..	4
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	12	6	44	75	23	126
HAKE	..	..	..	..	T	..
LINGCOD	..	..	..	..	5	..
OTHERS	T	T	..	..	3	T
SELACHI						
DOGFISH	..	2	..	..	..	..
OTHERS	..	..	T	..	..	..

APPENDIX TABLE 1 (continued)

HAUL NO.	43	44	45	46	47	48
DATE	MAY 29	MAY 29	MAY 29	MAY 29	MAY 29	MAY 29
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	921	1114	1230	1341	1451	1630
DURATION(HR.MIN)	.30	.29	.30	.29	.29	.30
START N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	6.4	6.0	5.3	3.6	6.9	8.2
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	24.4	26.1	29.1	31.0	29.9	28.2
DIRECTION (DEG.TRUE)	138	150	155	330	321	145
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	5.3	4.7	4.1	4.8	7.9	7.2
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	22.9	24.9	28.4	32.1	31.1	27.0
DISTANCE NAUT. MI.	1.5	1.5	1.3	1.4	1.3	1.4
DEPTH (FATHOMS)	63- 63	68- 70	71- 72	77- 75	68- 68	64- 66
SURFACE TEMP(DEG.C)	..	..	..	..	11.3	..
BOTTOM TEMP.(DEG.C)	..	..	..	..	7.0	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	53	151	73	32	100	66
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	43	44	45	46	47	48
DATE	MAY 29	MAY 29	MAY 29	MAY 29	MAY 29	MAY 29
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	53	151	73	32	100	71
SHRIMP						
PINK (JORDANI)	8	94	48	9	69	26
NUM/KG	228	190	185	250	262	192
PRAWN	..	T	..	T	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	T	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	T	1	T	8	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	2	2	..	..	..	2
REX SOLE	3	..	T	..	1	2
TURBOT	6	3	3	3	3	6
OTHERS	2	2	T	4	7	2
ROCKFISH						
S. ALUTUS	..	..	1	T	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	T	T	..	..	..	1
S. PAUCISPINIS	..	3	..	4	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	..	3	..	1	T	2
OTHER ROUNDFISH						
EULACHON	32	38	20	11	12	25
HAKE	..	..	..	..	..	..
LINGCOD	..	6	..	..	..	5
OTHERS	..	..	..	..	T	T
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	..	..	..	T	T	..

APPENDIX TABLE 1 (continued)

HAUL NO.	49	50	51	52	53	54
DATE	MAY 29	MAY 30	MAY 30	JUNE 1	JUNE 1	JUNE 1
AREA	CLSD	BASD	BASD	CLSD	CLSD	CLSD
TIME START (PST)	1738	719	933	716	819	923
DURATION(HR.MIN)	.30	.30	.30	.30	.30	.30
START N. LAT. (DEG)	49	48	48	49	49	49
(MIN)	7.5	53.6	47.1	8.1	10.4	10.0
W. LONG. (DEG)	126	125	125	126	126	126
(MIN)	25.0	14.4	20.3	22.5	26.5	28.8
DIRECTION (DEG.TRUE)	323	39	123	320	325	321
FINISH N. LAT. (DEG)	49	48	48	49	49	49
(MIN)	8.7	54.7	46.3	9.2	11.6	11.1
W.LONG. (DEG)	126	125	125	126	126	126
(MIN)	26.4	13.1	18.4	23.9	27.8	30.2
DISTANCE NAUT. MI.	1.5	1.4	1.4	1.4	1.5	1.4
DEPTH (FATHOMS)	61- 60	50- 54	50- 49	53- 53	55- 55	60- 61
SURFACE TEMP(DEG.C)	11.6	..	..	..	..	..
BOTTOM TEMP.(DEG.C)	7.2	..	..	..	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	97	753	119	128	114	75
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	49	50	51	52	53	54
DATE	MAY 29	MAY 30	MAY 30	JUNE 1	JUNE 1	JUNE 1
AREA	CLSD	BASD	BASD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	97	753	119	128	114	75
SHRIMP						
PINK (JORDANI)	16	6	29	..	..	..
NUM/KG	192	..	229	..	..	..
PRAWN	..	T	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	2	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	T
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	4	T	2	T	T
FLATFISH						
DAB (PACIFIC)	..	..	2	27	34	..
DOVER SOLE	..	8	2	T	T	T
FLATHEAD SOLE	4	T	9	..	..	4
REX SOLE	3	30	..	5	..	4
TURBOT	4	..	1	..	..	1
OTHERS	4	27	3	12	5	5
ROCKFISH						
S. ALUTUS	..	..	..	..	..	..
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	..	..	..	..	..	T
S. PAUCISPINIS	4	..	..	..	..	..
S. PINNIGER	..	..	..	..	6	3
OTHERS	35	..	..	..	..	..
OTHER ROUNDFISH						
EULACHON	27	T	37	..	..	34
HAKE	T	615	4	..	..	..
LINGCOD	..	2	..	52	37	3
OTHERS	T	15	28	28	9	20
SELACHI						
DOGFISH	..	..	4	2	19	1
OTHERS	T	44	T	..	4	T

APPENDIX TABLE 1 (continued)

HAUL NO.	55	56	57	58	59	60
DATE	JUNE 1	JUNE 1	JUNE 1	JUNE 1	JUNE 1	JUNE 1
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
TIME START (PST)	1106	1218	1324	1430	1609	1721
DURATION(HR.MIN)	.31	.32	.30	.32	.30	.30
START N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	9.6	9.0	11.7	13.3	12.5	14.3
W. LONG. (DEG)	126	126	126	126	126	126
(MIN)	32.3	33.9	35.8	35.0	31.1	37.3
DIRECTION (DEG.TRUE)	325	335	327	139	325	322
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	10.9	10.4	13.0	12.5	13.6	15.6
W.LONG. (DEG)	126	126	126	126	126	126
(MIN)	32.3	34.8	37.2	34.0	32.2	38.7
DISTANCE NAUT. MI.	1.6	1.5	1.6	1.1	1.4	1.6
DEPTH (FATHOMS)	66- 65	69- 68	66- 65	63- 63	58- 57	63- 63
SURFACE TEMP(DEG.C)	..	..	..	..	..	..
BOTTOM TEMP.(DEG.C)	..	..	..	..	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	83	370	173	88	681	61
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	55	56	57	58	59	60
DATE	JUNE 1	JUNE 1	JUNE 1	JUNE 1	JUNE 1	JUNE 1
AREA	CLSD	CLSD	CLSD	CLSD	CLSD	CLSD
CATCH TOTAL (KG)	83	370	173	88	681	61
SHRIMP						
PINK (JORDANI)	9	201	69	7	..	T
NUM/KG	168	236	368	322	..	..
PRAWN	T	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	T	..	T	..	T
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	T	T	2	T	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	1
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	3	..	..	6	2	1
REX SOLE	T	1	1	6	1	T
TURBOT	4	7	2	8	2	3
OTHERS	T	1	4	5	6	1
ROCKFISH						
S. ALUTUS	T	..	..	T	..	T
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	..	..	..	..	..	..
S. PAUCISPINIS	..	..	63	2	9	11
S. PINNIGER	..	150	28	..	..	..
OTHERS	..	..	..	..	..	1
OTHER ROUNDFISH						
EULACHON	64	..	5	43	21	38
HAKE	..	..	..	..	..	..
LINGCOD	3	..	..	4	11	..
OTHERS	T	..	..	T	9	T
SELACHI						
DOGFISH	..	10	..	5	618	..
OTHERS	..	..	1	T	2	5

APPENDIX TABLE 1 (continued)

HAUL NO.	61	62	63	64	65	66
DATE	JUNE 2	JUNE 2	JUNE 2	JUNE 2	JUNE 2	JUNE 2
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
TIME START (PST)	711	818	925	1111	1214	1321
DURATION(HR.MIN)	.30	.30	.30	.29	.31	.31
START N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	16.1	17.7	16.9	17.9	19.3	22.4
W. LONG. (DEG)	127	126	126	126	126	126
(MIN)	0.3	58.9	55.3	53.5	55.8	54.9
DIRECTION (DEG.TRUE)	331	151	325	346	352	139
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	17.2	16.5	18.1	19.2	20.7	21.3
W.LONG. (DEG)	127	126	126	126	126	126
(MIN)	1.2	57.8	56.5	53.9	56.1	53.7
DISTANCE NAUT. MI.	1.2	1.3	1.4	1.3	1.5	1.5
DEPTH (FATHOMS)	92- 89	84- 90	84- 84	82- 82	84- 84	78- 77
SURFACE TEMP(DEG.C)	..	..	12.4	..	..	..
BOTTOM TEMP.(DEG.C)	..	..	6.8	..	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	54	57	51	149	147	108
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	61	62	63	64	65	66
DATE	JUNE 2	JUNE 2	JUNE 2	JUNE 2	JUNE 2	JUNE 2
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
CATCH TOTAL (KG)	54	57	51	149	147	108
SHRIMP						
PINK (JORDANI)	..	2	4	93	41	60
NUM/KG	..	540	486	294	220	216
PRAWN	T	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	..	T	2	T	T	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	5	3	T	T	..	..
FLATHEAD SOLE	..	2	T	..	11	T
REX SOLE	16	16	1	4	5	T
TURBOT	7	27	20	15	36	6
OTHERS	3	5	2	3	4	T
ROCKFISH						
S. ALUTUS	..	..	T	..	..	T
S. BABCOCKI	..	..	..	4	..	..
S. CRAMERI	..	..	..	T	3	T
S. PAUCISPINIS	3	..	..	..	6	13
S. PINNIGER	..	..	..	..	..	..
OTHERS	15	1	T	T	T	..
OTHER ROUNDFISH						
EULACHON	..	1	12	30	35	29
HAKE	..	..	..	..	..	..
LINGCOD	5	..	10	..	5	..
OTHERS	T	..	..	T	1	T
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	..	..	..	..	T	..

APPENDIX TABLE 1 (continued)

HAUL NO.	67	68	69	70	71	72
DATE	JUNE 2	JUNE 2	JUNE 2	JUNE 3	JUNE 3	JUNE 3
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
TIME START (PST)	1432	1610	1711	715	827	930
DURATION(HR.MIN)	.30	.30	.30	.30	.30	.30
START N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	21.4	24.0	25.9	24.9	23.5	26.4
W. LONG. (DEG)	126	126	126	126	126	127
(MIN)	50.1	54.4	53.4	57.4	59.2	2.0
DIRECTION (DEG.TRUE)	147	326	141	141	346	339
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	20.5	25.5	24.9	23.8	24.9	27.8
W.LONG. (DEG)	126	126	126	126	126	127
(MIN)	49.1	55.8	52.2	56.1	59.8	3.0
DISTANCE NAUT. MI.	1.2	1.7	1.3	1.4	1.4	1.5
DEPTH (FATHOMS)	68- 67	72- 70	64- 65	73- 74	78- 76	76- 76
SURFACE TEMP(DEG.C)	..	..	..	..	12.2	..
BOTTOM TEMP.(DEG.C)	..	..	..	..	6.7	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	70	47	92	446	24	33
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	67	68	69	70	71	72
DATE	JUNE 2	JUNE 2	JUNE 2	JUNE 3	JUNE 3	JUNE 3
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
CATCH TOTAL (KG)	70	47	92	446	24	33
SHRIMP						
PINK (JORDANI)	8	13	T	303	14	25
NUM/KG	497	264	..	248	279	254
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	1	1	..	..	T	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	..	..	..	..	..	..
FLATHEAD SOLE	..	6	T	3	2	..
REX SOLE	2	6	7	3	..	T
TURBOT	1	8	11	23	5	2
OTHERS	3	1	5	12	T	T
ROCKFISH						
S. ALUTUS	..	..	T	..	..	T
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	..	T	..	T	..	..
S. PAUCISPINIS	3	..	23	24	..	..
S. PINNIGER	40	..	34	4	..	..
OTHERS	9	..	4	..	..	..
OTHER ROUNDFISH						
EULACHON	T	..	T	74	3	T
HAKE	..	T	..	T	..	..
LINGCOD	3	6	8	..	..	..
OTHERS	T	1	T	T	..	T
SELACHI						
DOGFISH	..	5	..	..	..	..
OTHERS	T	..	T	..	..	6

APPENDIX TABLE 1 (continued)

HAUL NO.	73	74	75	76	77	78
DATE	JUNE 3	JUNE 3	JUNE 3	JUNE 3	JUNE 3	JUNE 3
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
TIME START (PST)	1110	1224	1331	1438	1617	1723
DURATION(HR.MIN)	.30	.30	.30	.29	.30	.30
START N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	28.2	28.2	30.1	30.7	28.8	32.0
W. LONG. (DEG)	126	126	126	127	127	127
(MIN)	59.7	57.0	57.8	1.8	3.7	4.1
DIRECTION (DEG.TRUE)	149	139	325	156	331	330
FINISH N. LAT. (DEG)	49	49	49	49	49	49
(MIN)	27.2	27.3	31.5	29.5	30.3	33.4
W.LONG. (DEG)	126	126	126	127	127	127
(MIN)	58.7	55.7	59.3	1.0	4.9	5.3
DISTANCE NAUT. MI.	1.2	1.3	1.7	1.3	1.6	1.5
DEPTH (FATHOMS)	69- 69	65- 65	63- 64	68- 69	76- 74	69- 69
SURFACE TEMP(DEG.C)	..	..	..	..	..	12.5
BOTTOM TEMP.(DEG.C)	..	..	..	..	..	7.0
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	37	239	9	44	503	85
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	73	74	75	76	77	78
DATE	JUNE 3	JUNE 3	JUNE 3	JUNE 3	JUNE 3	JUNE 3
AREA	NOSD	NOSD	NOSD	NOSD	NOSD	NOSD
CATCH TOTAL (KG)	37	239	9	44	503	85
SHRIMP						
PINK (JORDANI)	6	155	T	T	12	5
NUM/KG	374	400	..	..	278	449
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	T	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	..	T	T	T	T	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	..	T	..	T	1	2
FLATHEAD SOLE	..	T	..	..	2	T
REX SOLE	4	4	..	T	6	7
TURBOT	15	3	T	10	69	68
OTHERS	6	19	T	2	T	T
ROCKFISH						
S. ALUTUS	..	..	..	..	T	T
S. BABCOCKI	..	..	..	..	..	..
S. CRAMERI	..	..	..	..	T	..
S. PAUCISPINIS	..	10	..	15	4	3
S. PINNIGER	3	..	..	..	378	..
OTHERS	..	..	..	..	T	T
OTHER ROUNDFISH						
EULACHON	2	29	9	6	30	..
HAKE	..	..	..	..	..	..
LINGCOD	..	5	..	6	..	..
OTHERS	1	13	T	1	1	T
SELACHI						
DOGFISH	..	..	..	4	..	..
OTHERS	..	1	..	T	..	..

APPENDIX TABLE 1 (continued)

HAUL NO.	79	80	81	82	83	84
DATE	JUNE 4	JUNE 4	JUNE 4	JUNE 4	JUNE 4	JUNE 5
AREA	CLSD	NOSD	NOSD	NOSD	NOSD	NEGI
TIME START (PST)	714	1110	1225	1332	1441	715
DURATION(HR.MIN)	.30	.30	.30	.29	.30	.30
START N. LAT. (DEG)	49	49	49	49	49	51
(MIN)	8.7	28.2	31.1	30.8	29.5	19.8
W. LONG. (DEG)	126	127	127	127	127	128
(MIN)	37.4	6.2	7.5	11.7	9.8	44.4
DIRECTION (DEG.TRUE)	301	324	317	316	148	359
FINISH N. LAT. (DEG)	49	49	49	49	49	51
(MIN)	9.5	29.3	32.1	31.9	28.3	20.9
W.LONG. (DEG)	126	127	127	127	127	128
(MIN)	39.2	7.5	9.0	13.3	8.7	44.3
DISTANCE NAUT. MI.	1.3	1.4	1.4	1.6	1.4	1.0
DEPTH (FATHOMS)	70- 69	80- 80	78- 79	87- 88	84- 83	112-120
SURFACE TEMP(DEG.C)	11.5	..	..	12.4	..	..
BOTTOM TEMP.(DEG.C)	7.0	..	..	6.6	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	45	33	36	18	53	298
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	79	80	81	82	83	84
DATE	JUNE 4	JUNE 4	JUNE 4	JUNE 4	JUNE 4	JUNE 5
AREA	CLSD	NOSD	NOSD	NOSD	NOSD	NEGI
CATCH TOTAL (KG)	45	33	36	18	53	298
SHRIMP						
PINK (JORDANI)	T	3	7	T	..	4
NUM/KG	..	324	475	..	..	254
PRAWN	..	..	..	..	..	2
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	..	..	..	..	..	T
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	T
INVERTBRATES						
SPONGES	..	..	..	..	..	200
OTHERS	T	1	1	6	3	1
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	..	T	T	..	..	14
FLATHEAD SOLE	..	T	T	..	..	..
REX SOLE	T	6	2	..	3	T
TURBOT	9	21	24	10	44	2
OTHERS	T	1	1	1	1	..
ROCKFISH						
S. ALUTUS	..	T	T	..	1	33
S. BABCOCKI	..	..	..	..	..	2
S. CRAMERI	..	T	T	..	..	T
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	T	T	..	T	T	23
OTHER ROUNDFISH						
EULACHON	26	1	T	..	1	..
HAKE	..	..	..	..	..	..
LINGCOD	4	..	1	..	..	..
OTHERS	6	T	T	1	T	1
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	..	..	..	..	..	16

APPENDIX TABLE 1 (continued)

HAUL NO.	85	86	87	88	89	90
DATE	JUNE 5	JUNE 5	JUNE 5	JUNE 5	JUNE 5	JUNE 5
AREA	NEGI	NEGI	NEGI	NEGI	NEGI	NEGI
TIME START (PST)	843	1012	1144	1253	1418	1630
DURATION(HR.MIN)	.30	.30	.30	.30	.30	.30
START N. LAT. (DEG)	51	51	51	51	51	51
(MIN)	23.2	22.3	21.4	21.9	25.4	27.1
W. LONG. (DEG)	128	128	128	128	128	128
(MIN)	46.0	43.2	36.2	39.6	36.5	28.3
DIRECTION (DEG.TRUE)	348	360	348	353	349	6
FINISH N. LAT. (DEG)	51	51	51	51	51	51
(MIN)	24.7	23.8	22.8	23.3	26.7	28.5
W.LONG. (DEG)	128	128	128	128	128	128
(MIN)	46.7	43.2	36.6	39.8	36.9	28.1
DISTANCE NAUT. MI.	1.5	1.5	1.5	1.4	1.4	1.4
DEPTH (FATHOMS)	123-111	122-122	112-116	119-121	119-116	109-109
SURFACE TEMP(DEG.C)	..	..	..	11.6	..	14.2
BOTTOM TEMP.(DEG.C)	..	..	..	5.9	..	6.0
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	118	195	132	75	244	160
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	85	86	87	88	89	90
DATE	JUNE 5	JUNE 5	JUNE 5	JUNE 5	JUNE 5	JUNE 5
AREA	NEGI	NEGI	NEGI	NEGI	NEGI	NEGI
CATCH TOTAL (KG)	118	195	132	75	244	160
SHRIMP						
PINK (JORDANI)	16	13	11	4	67	17
NUM/KG	236	234	240	246	251	360
PRAWN	1	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	T	..	..	T	T	T
NUM/KG	..	..	..	..	..	..
OTHER SHRIMP	..	..	..	..	..	..
INVERTBRATES						
SPONGES	3	..	..	..	..	T
OTHERS	T	..	..	T	..	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	50	25	10	23	14	35
FLATHEAD SOLE	..	..	..	..	..	T
REX SOLE	1	1	..	..	..	..
TURBOT	14	10	35	6	30	28
OTHERS	T	..	..	..	..	T
ROCKFISH						
S. ALUTUS	21	120	68	40	82	17
S. BABCOCKI	..	9	..	1	33	31
S. CRAMERI	..	1	..	..	2	..
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	7	2	5	T	7	11
OTHER ROUNDFISH						
EULACHON	3	2	1	1	7	3
HAKE	..	..	..	T	..	..
LINGCOD	..	..	..	..	..	..
OTHERS	2	12	2	T	2	T
SELACHI						
DOGFISH	..	..	..	..	..	..
OTHERS	..	..	..	T	T	18

APPENDIX TABLE 1 (continued)

HAUL NO.	91	92	93	94	95	96
DATE	JUNE 5	JUNE 6	JUNE 6	JUNE 6	JUNE 6	JUNE 6
AREA	NEGI	NWGI	NWGI	NWGI	NWGI	NWGI
TIME START (PST)	1740	712	827	939	1134	1244
DURATION(HR.MIN)	.30	.30	.30	.23	.30	.31
START N. LAT. (DEG)	51	52	52	52	51	51
(MIN)	27.2	4.5	2.3	2.6	59.7	58.5
W. LONG. (DEG)	128	128	128	128	128	128
(MIN)	31.1	52.1	47.6	44.6	46.7	42.1
DIRECTION (DEG.TRUE)	355	203	189	179	170	156
FINISH N. LAT. (DEG)	51	52	52	52	51	51
(MIN)	28.5	3.1	0.8	1.5	58.5	57.4
W.LONG. (DEG)	128	128	128	128	128	128
(MIN)	31.2	53.0	48.1	44.7	46.4	41.2
DISTANCE NAUT. MI.	1.4	1.6	1.6	1.2	1.2	1.2
DEPTH (FATHOMS)	113-110	98- 94	96- 98	98-102	95- 93	89- 87
SURFACE TEMP(DEG.C)	..	..	..	..	..	..
BOTTOM TEMP.(DEG.C)	..	..	..	..	..	..
TYPE OF GEAR	8	8	8	8	8	8
TOTAL CATCH (KG)	97	95	152	65	206	406
REMARKS	USABLE	USABLE	USABLE	USABLE	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	91	92	93	94	95	96
DATE	JUNE 5	JUNE 6	JUNE 6	JUNE 6	JUNE 6	JUNE 6
AREA	NEGI	NWGI	NWGI	NWGI	NWGI	NWGI
CATCH TOTAL (KG)	97	95	152	65	206	406
SHRIMP						
PINK (JORDANI)	15	52	31	31	30	225
NUM/KG	275	246	245	296	268	270
PRAWN	..	..	..	..	..	..
NUM/KG	..	..	..	..	..	..
SIDESTRIPE	T	1	T	..	..	..
NUM/KG	..	91	..	..	..	..
OTHER SHRIMP	..	..	..	..	T	..
INVERTBRATES						
SPONGES	..	..	..	..	..	..
OTHERS	T	..	T	T	1	T
FLATFISH						
DAB (PACIFIC)	..	..	..	..	..	..
DOVER SOLE	1	..	..	T	..	..
FLATHEAD SOLE	T	T	T	T	24	15
REX SOLE	..	..	..	..	..	T
TURBOT	24	17	28	15	18	150
OTHERS	T	T	T	T	T	2
ROCKFISH						
S. ALUTUS	17	24	87	17	126	12
S. BABCOCKI	17	..	..	..	..	..
S. CRAMERI	..	..	..	..	..	T
S. PAUCISPINIS	..	..	..	..	..	..
S. PINNIGER	..	..	..	..	..	..
OTHERS	11	1	3	1	2	..
OTHER ROUNDFISH						
EULACHON	5	T	T	..	..	..
HAKE	2	..	..	..	..	..
LINGCOD	..	..	..	..	..	..
OTHERS	2	T	1	T	T	..
SELACHI						
DOGFISH	..	..	..	1	4	..
OTHERS	3	..	2	T	1	2

APPENDIX TABLE 1 (continued)

HAUL NO.	97	98
DATE	JUNE 6	JUNE 6
AREA	NWGI	NEGI
TIME START (PST)	1414	1725
DURATION(HR.MIN)	.30	.30
START N. LAT. (DEG)	51	51
(MIN)	55.6	29.8
W. LONG. (DEG)	128	128
(MIN)	43.2	34.0
DIRECTION (DEG.TRUE)	147	187
FINISH N. LAT. (DEG)	51	51
(MIN)	54.6	28.1
W.LONG. (DEG)	128	128
(MIN)	42.2	34.1
DISTANCE NAUT. MI.	1.3	1.6
DEPTH (FATHOMS)	83- 81	107-112
SURFACE TEMP(DEG.C)	..	12.8
BOTTOM TEMP.(DEG.C)	..	5.8
TYPE OF GEAR	8	8
TOTAL CATCH (KG)	326	4
REMARKS	USABLE	USABLE

APPENDIX TABLE 1 (continued)

HAUL NO.	97	98
DATE	JUNE 6	JUNE 6
AREA	NWGI	NEGI
CATCH TOTAL (KG)	326	4
SHRIMP		
PINK (JORDANI)	T	T
NUM/KG	..	..
PRAWN	..	..
NUM/KG	..	..
SIDESTRIPE	..	..
NUM/KG	..	..
OTHER SHRIMP	..	..
INVERTBRATES		
SPONGES	..	..
OTHERS	..	..
FLATFISH		
DAB (PACIFIC)	..	..
DOVER SOLE	..	..
FLATHEAD SOLE	14	..
REX SOLE	T	..
TURBOT	305	..
OTHERS	2	..
ROCKFISH		
S. ALUTUS	T	3
S. BABCOCKI	..	1
S. CRAMERI	..	..
S. PAUCISPINIS	..	..
S. PINNIGER	..	..
OTHERS	T	..
OTHER ROUNDFISH		
EULACHON	T	T
HAKE	..	..
LINGCOD	..	..
OTHERS	3	..
SELACHI		
DOGFISH	2	..
OTHERS	..	..

Footnotes to Appendix table 1.

AREA: CLSD = Tofino Ground, NOSD = Nootka Ground, NEGI = Northeast Goose Island Bank (Q.C.S.), NWGI = Northwest Goose Island Bank, BASD = Barkley Sound.

TIME START: PST = Pacific Standard Time (+8).

DEPTH (fathoms): Depth at beginning and end of tow.

TYPE OF GEAR: 8 = Nat. Mar. Fish. 61-ft shrimp sampling trawl.

T: trace = less than 1 kilogram in any one tow.

Westcoast Vancouver Island

Queen Charlotte Sound

Rockfish: S. alutus, S. babcocki, S. brevispinis, S. diploproa, S. elongatus, S. flavidus, S. helvomaculatus, S. proriger, S. ruberrimus, S. wilsoni, S. zacentrus.

Flatfish: Dover sole, English sole, Halibut, Petrale sole, Rock sole.

Roundfish: Sablefish, Seaperch, Eelpout, Herring, Smelt, Midshipman, Pacific cod, Poacher, Wrymouth, Sculpin, Shad, Tomcod.

Selachii: Ratfish, skate.

Invertebrates: Prawn, Sidestripe shrimp, Argis spp., Crangon spp., Spirontocaris spp., Eualus spp., Anemone, Seapen, Scallop, Squid, Octopus, Sipunculid, Starfish, Sea slug, Brittlestar, Basket star, Sea urchin, Heart urchin, Sea cucumber, Hermit crab, Box crab, Graceful crab, Aphrodita sp., Hemichordata, Mysids.

APPENDIX TABLE 2. XBT temperatures (°C) by standard depths (m) collected during G.B.R.-S-85 May 24 to June 7, 1985.

Stn./Tow	Date	0	10	20	30	50	75	100	125	150	200	250	300
2	24/V/85	12.4	11.0	10.0	9.4	8.6	8.2	8.2	7.3				
4		11.7	11.7	11.3	9.6	8.9	8.3	8.1	7.8	7.2			
5		12.5	11.8	10.4	9.6	8.6	8.2	7.6					
14	26/V/85	11.9	1.3	9.7	9.5	8.7	8.3	8.3	7.8				
17		11.7	10.8	9.3	9.0	7.7	7.7	7.3	7.2	6.3			
22		11.5	11.2	10.3	9.3	8.1	7.8	7.5					
26	27/V/85	11.9	11.4	9.2	8.7	8.0	7.7	7.6	6.7				
28		12.2	11.3	9.8	8.1	7.8	7.4	6.8	6.6				
33	28/V/85	12.2	11.7	9.7	8.8	7.9	7.6	7.2					
36		12.3	11.5	9.2	8.7	7.7	7.5	7.0	6.9	6.6			
40		12.3	10.3	8.7	8.3	7.7	7.6	7.2	6.8				
47	29/V/85	11.3	11.1	9.5	8.7	7.7	7.3	7.0					
49		11.5	11.5	9.3	8.4	8.0	7.5	7.2					
Stn 80*	31/V/85	11.0	10.7	10.0	9.7	8.7	7.9	7.8	7.8	7.4	6.9	6.3	5.9
Stn 60*		11.5	11.2	10.5	8.8	8.1	7.8	7.6	7.4	7.2	6.9	6.1	5.7
Stn 50*		11.9	11.4	10.3	9.1	8.2	7.8	7.4	7.3	7.1	6.7	6.2	5.8
Stn 40*		11.8	10.7	10.0	9.1	8.2	7.7	7.3	7.3	6.7	6.2	5.9	5.7
Stn 30*		13.3	11.2	9.8	8.7	8.2	7.8	7.6	7.3	6.9	6.4	5.9	5.3
Stn 20*		13.8	10.5	9.3	8.4	7.9	7.7	7.2	6.5	6.5			
Stn 15*		13.1	11.6	9.6	8.6	7.9	7.6	6.9	6.9				
Stn 10*		13.4	11.4	8.6	8.3	7.6	7.5						
Stn 5*		13.4	11.7	9.5	8.0								
Stn 0*		12.2	10.5	9.2	8.2								
63	2/VI/85	12.4	12.2	9.8	8.3	7.9	7.7	7.2	6.8				
71	3/VI/85	12.2	12.1	9.7	8.3	7.8	7.5	7.2	6.7				
78		12.5	12.4	11.2	9.2	8.1	7.6	7.3	7.0				
79	4/VI/85	12.0	11.5	11.0	8.7	7.9	7.5	7.1	7.0				
82		12.4	11.7	10.2	8.5	7.9	7.5	7.1	6.7	6.6			
88	5/VI/85	11.6	10.5	9.2	8.8	8.3	7.9	7.7	6.7	6.4	5.9		
90		14.2	11.7	11.0	8.4	8.1	7.7	7.3	6.9	6.3	6.0		
98	6/VI/85	12.8	12.8	11.5	9.4	9.0	8.0	7.5	6.9	6.6	5.8		

*Not a trawl location -- see footnote for position

Footnote to Appendix table 2.

Stn. No.	Latitude	Longitude
80	48°19.0'N	127°33.0'W
60	48°31.0'N	127°09.7'W
50	48°37.5'N	126°57.5'W
40	48°43.5'N	126°46.4'W
30	48°49.6'N	126°34.6'W
20	48°55.8'N	126°22.6'W
15	48°58.9'N	126°16.6'W
10	49°02.0'N	126°10.6'W
5	49°05.2'N	126°04.2'W

Appendix table 3. Size compositions of miscellaneous species collected during GBR-S-85-1, May 24 to June 7, 1985 (original measurements in 1-cm intervals to nearest lower centimeter for rockfish and pollock; nearest cm for hake.

S. alutus Tow #	83	86		87		88		89		92			93		95		S. wilsoni 61		Hake 50	Pollock 79
Length	unk.	M	F	M	F	M	F	M	F	M	F	unk.	M	F	M	F	M	F	unk.	unk.
8	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
10	10	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	2	1	-	-
12	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	9	-	-
14	-	-	-	-	-	-	-	-	-	2	2	-	-	-	1	-	33	21	-	-
16	-	-	-	5	1	1	-	2	1	24	7	-	2	-	3	1	30	27	-	-
18	-	21	1	13	5	2	2	3	1	22	15	-	8	4	15	8	17	13	1	3
20	-	5	1	11	7	4	2	3	0	33	26	-	6	8	21	12	-	11	2	12
22	-	11	10	39	30	8	7	5	7	35	25	-	21	19	17	16	-	5	0	36
24	-	21	16	31	30	13	7	4	2	8	9	-	28	25	29	22	-	-	1	4
26	-	9	5	16	7	2	4	2	2	2	4	-	26	16	26	16	-	-	11	1
28	-	9	4	7	5	0	0	3	2	-	-	-	1	3	4	2	-	-	42	-
30	-	11	6	3	3	1	3	2	2	-	-	-	1	0	-	1	-	-	40	-
32	-	27	14	4	1	6	7	5	2	-	-	-	-	1	-	-	-	-	19	-
34	-	24	31	0	0	6	6	4	9	-	-	-	-	-	-	-	-	-	15	-
36	-	5	6	1	5	3	0	4	1	-	-	-	-	-	-	-	-	-	8	-
38	-	3	1	1	2	1	3	7	1	-	-	-	-	-	-	-	-	-	3	-
40	-	21	1	5	2	4	1	22	2	-	-	-	-	-	-	-	-	-	-	-
42	-	6	5	6	1	3	0	11	4	-	-	-	-	-	-	-	-	-	-	-
44	-	3	1	2	2	1	3	5	5	-	-	-	-	-	-	-	-	-	-	-
46	-	1	1	2	2	-	1	-	5	-	-	-	-	-	-	-	-	-	-	-
48	-	-	3	1	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
50	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	40	177	107	147	105	55	46	82	49	126	88	6	93	76	116	78	104	87	142	56